

REMARKS

This application pertains to a novel separation module.

Claims 2, 4-11, 13-16 and 18-28 are pending, although claims 18-25 and 28 have been withdrawn from consideration as drawn to non-elected subject matter.

Applicants respectfully request that the non-elected subject matter be rejoined with the elected subject-matter upon allowance of elected subject-matter.

Applicants' claims have been amended to recite that the film strips are **staggered ceramic** film strips. Support can be found at page 14, lines 5 & 8. No new matter is added.

Initially, Applicants' wish to draw the Examiner's attention to an apparent typographical error in the Office Actions of December 11, 2008 and May 28, 2008. In the office action of May 28, 2008 the last paragraph of page 3 is incomplete and in the office action of December 11, 2008 the last paragraph of page 4 is incomplete, in both cases ending with the words "Kalthod further teaches..." without indicating what it is that the Examiner believes Kalthod further teaches.

Turning now to the office action of December 11, 2008, claims 4-5, 8-11 and 26-27 stand rejected under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad.

The Examiner views Kalthod as disclosing a fluid separation module comprising at least one bundle of ceramic capillaries, but as failing to disclose the establishment of a distance between the capillaries by attaching film strips to the capillaries while the capillaries are parallel, winding the capillaries into a bundle and joining the ending of the bundle of capillaries in an end plate and failing to teach that the film strips define a distance between the individual capillaries in the bundle and also forming baffle plates within the bundle.

The Examiner views McGinnis as teaching capillaries laid side by side in a spaced apart relationship, wound into a bundle and joined at the ending of the bundle in end plates.

The Examiner sees it as obvious to fabricate the device of Kalthod as described in McGinnis.

The Examiner acknowledges that Kalthod and McGinnes both fail to teach attaching film strips while the capillaries are parallel or that the film strips define a distance between the individual capillaries in the bundle and also form baffle plates within the bundle.

The Examiner turns to Prasad for a teaching of baffle plates, and finds it obvious to provide the device of Kalthod in view of McGinnis with baffle plates, apparently relying on Prasad for the baffle plates that he would add to the device he believes results from the Kalthod/McGinnis combination of references.

The Examiner misses several important points, however. Simply adding baffles to whatever device results from the Kalthod/McGinnis combination of references will never lead to Applicants' novel separation module.

In Applicants novel separation module, the staggered ceramic strips perform a number of functions: they hold the capillaries together to form a bundle, they space the capillaries apart from each other and they also function as baffles which result in forced flow (page 11, lines 1-4). Thus the "shell side", fluid can flow between and around the individual capillaries.

By contrast, McGinnis does not teach anything about the use of film strips to space the capillaries apart, hold them in a bundle and at the same time permit the shell side fluid to flow between and around the individual capillaries. McGinnis teaches layers of hollow filaments separated by a thin layer of foraminous material. Thus a shell-side fluid cannot easily flow between the capillaries of adjacent layers of capillaries, because the layer of foraminous material would disrupt the flow.

Adding Prasad's baffle plates to the Kalthod/McGinnis device would not eliminate the layer of foraminous material to provide free space between the adjacent capillaries and, furthermore, would add further obstacles to flow in the form of the added baffle plates which would further complicate the construction and operation of the device.

Of greater importance is the fact that the result of this combination of references could never arrive at the separation module defined by Applicants' claim 27 and those claims depending from that claim.

Accordingly, Applicants' claims cannot be seen as obvious over the Kalthod/McGinnis/Prasad combination of references, and the rejection of claims 4-5, 8-11 and 26-27 under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad should now be withdrawn.

Claims 2, 6, 7 and 12 stand rejected under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad as applied to claim 5 above and further in view of Teketomo. The differences between Applicants' claims and anything that can be derived from the Kalthod/McGinnis/Prasad combination of references have been discussed above. The Examiner relies on Teketomo US 4,671,809 for end plates. No end plates could possibly overcome the differences pointed out between the module defined by Applicants claims and anything that could be derived from the Kalthod/McGinnis/Prasad combination of references.

The rejection of claims 2, 6, 7 and 12 under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad as applied to claim 5 above and further in view of Teketomo should therefore now be withdrawn.

Claims 13 and 14 stand rejected under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad as applied to claim 27 above and further in view of Shay US 4,310,607.

The differences between Applicants' claims and anything that can be derived from the Kalthod/McGinnis/Prasad combination of references have been discussed above. The Examiner relies on Shay for a stainless steel housing. No stainless steel housing could possibly overcome the differences pointed out between the module defined by Applicants claims and anything that could be derived from the Kalthod/McGinnis/Prasad combination of references. The rejection of claims 13 and 14 under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad as applied to claim 27 above and further in view of Shay US 4,310,607 should therefore now be withdrawn.

Claim 15 stands rejected under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad as applied to claim 27 above and further in view of Bellhouse US 6,217,764. The differences between Applicants' claims and anything that can be derived from the

Kalthod/McGinnis/Prasad combination of references have been discussed above. The Examiner relies on Bellhouse for a ceramic housing. No ceramic housing could possibly overcome the differences pointed out between the module defined by Applicants claims and anything that could be derived from the Kalthod/McGinnis/Prasad combination of references. The rejection of claim 15 under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad as applied to claim 27 above and further in view of Bellhouse US 6,217,764 should therefore now be withdrawn.

Claim 16 stands rejected under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad as applied to claim 27 above and further in view of Dobo US 4,268,278. The differences between Applicants' claims and anything that can be derived from the Kalthod/McGinnis/Prasad combination of references have been discussed above. The Examiner relies on Dobo for a separation module comprising a catalyst. The inclusion of a catalyst in the device of the Kalthod/McGinnis/Prasad combination of references could not possibly overcome the differences pointed out between the module defined by Applicants claims and anything that could be derived from the Kalthod/McGinnis/Prasad combination of references. The rejection of claim 16 under 35 U.S.C. 103(a) as obvious over Kalthod US 5,779,897 in view of McGinnis US 3,690,465 and further in view of Prasad as applied to claim 27 above and further in view of Dobo US 4,268,278 should therefore now be withdrawn.

In view of the present amendments and remarks it is believed that claims 2, 4-11, 13-16 and 18-28 are now in condition for allowance. Reconsideration of said claims by the Examiner is respectfully requested and the allowance thereof is courteously solicited.

CONDITIONAL PETITION FOR EXTENSION OF TIME

If any extension of time for this amendment is required, applicants request that this be considered a petition therefore. Please charge the required petition fee to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fee or credit any excess to Deposit Account No. 14-1263.

Respectfully submitted,  
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